

IN THE CLAIMS

Please amend the following claims:

1. (previously presented) A fingerprint imager for capturing an image of a fingerprint comprising:  
a single sensor integrated circuit having  
an imaging array having a plurality of sensors arranged along a first axis for capturing a sub-image of the fingerprint at one time; wherein the fingerprint is moved with respect to the imaging array in a direction that is generally perpendicular to the first axis; and  
a mechanism for determining a change in the position of the fingerprint with respect to time and controlling the image capture of the imaging array that includes  
a navigation array having a plurality of sensors for capturing navigation images of a portion of the fingerprint as the fingerprint moves with respect to the navigation array; and  
a navigation circuit, coupled to the navigation array, for controlling when the navigation array captures navigation images and for receiving the navigation images and based thereon for determining the amount of movement of a fingerprint generally along the first axis and the amount of movement of a fingerprint along a second axis that is generally perpendicular to the first axis.
2. (cancelled)
3. (previously presented) The fingerprint imager of Claim 1 wherein the imaging array and the navigation array share at least one sensor.
4. (previously presented) The fingerprint imager of Claim 1 wherein the imaging array is separate from the navigation array.

5. (previously presented) The fingerprint imager of Claim 1 wherein the plurality of sensors of the imaging array is one of resistive-type sensors, capacitive type sensors, and optical-type sensors; and wherein the plurality of sensors of the navigation array is one of resistive-type sensors, capacitive type sensors, and optical-type sensors.
6. (original) The fingerprint imager of Claim 1 wherein the fingerprint imager includes a surface along which a finger is moved and wherein the fingerprint imager is implemented in a stand-alone unit comprising:
  - a) optics for focusing light onto the surface; and
  - b) optics assembly for housing the optics.
7. (original) The fingerprint imager of Claim 1 wherein the fingerprint imager includes a surface along which a finger is moved and wherein the fingerprint imager is implemented in a personal computer (PC) peripheral comprising:
  - a) optics for focusing light onto the surface; and
  - b) optics assembly for housing the optics.
8. (original) The fingerprint imager of Claim 7 wherein the PC peripheral device is one of a cursor pointing device and a keyboard.
9. (original) The fingerprint imager of Claim 1 wherein the fingerprint imager includes a surface along which a finger is moved and wherein the surface is one of a physical surface and an optical imaging plane.
10. (previously presented) The fingerprint imager of Claim 1 wherein the pixel size of the sensors of the imaging array is different from the pixel size of the sensors in the navigation array.

11. (previously presented) The fingerprint imager of Claim 10 wherein the pixel size of the sensors of the imaging array has the dimensions of about 50 microns by about 50 microns and the pixel size of the sensors of the navigation array has the dimensions of about 20 microns by about 20 microns.
12. (previously presented) The fingerprint imager of Claim 1 wherein the resolution of the sensors of the imaging array and the sensors of the navigation array is about 500 dots per inch.
13. (previously presented) The fingerprint imager of Claim 1 wherein the fingerprint imager is implemented in a stand-alone unit and wherein the fingerprint imager further comprises:
  - a) a capacitive sensor having a surface along which a finger is moved; and
  - b) an assembly for housing the capacitive sensor.
14. (previously presented) The fingerprint imager of Claim 1 wherein the fingerprint imager is implemented in a personal computer (PC) peripheral and wherein the fingerprint imager further comprises:
  - a) a capacitive sensor having a surface along which a finger is moved; and
  - b) an assembly for housing the capacitive sensor.
15. (previously presented) The fingerprint imager of Claim 1 further comprising:
  - a) an imaging array strobe generator for employing the change in position to selectively control when the imaging array captures the sub-images; and
  - b) a processor;
  - c) a composite image generation software which when executing on the processor receives the sub-images and the movement information for each sub-image relative to a previous sub-image and based thereon generates a composite image of the fingerprint; and
  - d) an identification software which when executing on the processor receives the composite image of the fingerprint, analyzes the composite image to generate minutia, and compares

the generated minutia to previously stored minutia, and grants access to a resource if the generated minutia matches one of the previously stored minutia.

16. (previously presented) The fingerprint imager of Claim 1 further comprising:
  - a) a processor; and
  - b) a cursor control software which when executing on the processor receives the movement information from the navigation circuit and uses the movement information to control the cursor.
17. (original) The fingerprint imager of Claim 1 wherein the imaging array is a 1 by N sensor array.
18. (previously presented) The fingerprint imager of Claim 1 wherein the navigation array is a P by Q sensor array.
19. (previously presented) An imager for capturing a fingerprint to image comprising:
  - a surface having an axis; wherein the fingerprint is moved in a first direction relative to the axis of the surface;
  - an imaging sensor array having a plurality of sensors arranged along a first axis for imaging a portion of a fingerprint at one time in response to an asserted imaging sensor array strobe signal; wherein the first axis is generally perpendicular to the first direction of the movement of the fingerprint;
  - a navigation sensor array having a plurality of sensors for obtaining movement information of the fingerprint in response to an asserted navigation sensor array strobe signal;
  - and
  - a navigation circuit, coupled to the navigation array, for receiving images and based thereon for determining the amount of movement of the fingerprint in a first direction and in a second direction;wherein the imaging sensor array, navigation sensor array and the navigation circuit are integrated in a single chip.

20. (previously presented) A method of imaging a fingerprint by using a single sensor chip having an integrated navigation engine comprising:
- capturing navigation images of the fingerprint by using a navigation sensor array;
  - based on the navigation images, determining when to capture a sub-image of the fingerprint by using an imaging sensor array having a plurality of pixels for imaging a portion of the fingerprint at one time;
  - successively capturing a plurality of sub-images by using the imaging sensor array as the fingerprint moves with respect to the imaging sensor array in a single pass; and
  - generating a composite image of the object based on the captured portions of the fingerprint by using a processor-based application;
- wherein the single sensor chip is integrated with the navigation engine and navigation sensor array.
21. (previously presented) The method of claims 20 wherein the fingerprint that has a width; and wherein successively capturing a plurality of sub-images by using the imaging sensor array as the fingerprint moves with respect to the imaging sensor array in a single pass includes employing a  $1 \times N$  imaging sensor array that includes  $N$  sensors and that captures sub-images of the fingerprint that include substantially the width of the fingerprint.